

Chapter NR 152

Appendix B

MODEL POST-CONSTRUCTION STORM WATER MANAGEMENT ORDINANCE

Note to Users: *The “Users” in this document are the municipalities that use this guidance in developing their ordinances. “Note to Users” appears in italics throughout these model ordinances and should not be included in the final ordinance. This model ordinance includes the use of brackets [] around phrases that are to be filled in by the municipality. For example, the phrase [administering authority] is frequently used. When the municipality chooses to have the ordinance administered by the City Engineer, the phrase [administering authority] should be replaced by “City Engineer.” In a few places, the model ordinance includes phrases in brackets that are underlined [_____]. In these cases, one of the underlined phrases should be selected verbatim. For example, if the phrase includes statutory citations, several underlined choices may be given such as [59.693, 60.627, 61.354, or 62.234]. A county would replace the phrase in brackets with “59.693,” since that is the appropriate citation for a county to use. Some sections and subsections are optional for users to include in the ordinance and will be identified as such in a “Note to Users.” An asterisk (*) denotes subsequent numbering and references to numbered sections or subsections that would be affected by exclusion of the optional text.*

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Note to Users: An asterisk (*) denotes subsequent numbering and references to numbered sections or subsections that would be affected by exclusion of the optional text.

MODEL POST-CONSTRUCTION STORM WATER MANAGEMENT ORDINANCE

AN ORDINANCE TO CREATE CHAPTER [NUMBER] OF THE [CODE OR ORDINANCE] OF THE [NAME OF MUNICIPALITY] RELATING TO THE CONTROL OF POST-CONSTRUCTION RUNOFF

FOREWORD.

The intent of this ordinance is to reduce the discharge of pollutants carried in storm water runoff to waters of the state. Use of this ordinance by municipalities will foster the consistent, statewide application of post-construction performance standards for new development and redevelopment contained in subch. III and IV of ch. NR 151, Wis. Adm. Code.

The [governing body (town board of supervisors, county board of supervisors, city council, village board of trustees, or village council)] of the [name of municipality] does hereby ordain that Chapter [number] of the [code or ordinance] of the [name of municipality] is created to read as follows:

[CHAPTER]

POST-CONSTRUCTION STORM WATER MANAGEMENT

S. 01 AUTHORITY.

- (1) This ordinance is adopted by the [governing body] under the authority granted by s. [59.693 (for counties); 60.627 (for towns); 61.354 (for villages); or 62.234 (for cities)], Wis. Stats. This ordinance supersedes all provisions of an ordinance previously enacted under s. [59.69, 60.62, 61.35, or 62.23], Wis. Stats., that relate to storm water management regulations. Except as otherwise specified in s. [59.693, 60.627, 61.354, or 62.234], Wis. Stats., s. [59.69, 60.62, 61.35, or 62.23], Wis. Stats., applies to this ordinance and to any amendments to this ordinance.

Note to Users: *There may be instances when this ordinance does not supersede other ordinances relating to construction erosion control previously adopted by the governing body.*

- (2) The provisions of this ordinance are deemed not to limit any other lawful regulatory powers of the [governing body].
- (3) The [governing body] hereby designates the [administering authority] to administer and enforce the provisions of this ordinance.
- (4) The requirements of this ordinance do not preempt more stringent storm water management requirements that may be imposed by any of the following:
- (a) Wisconsin Department of Natural Resources administrative rules, permits, or approvals including those authorized under ss. 281.16 and 283.33, Wis. Stats.
 - (b) Targeted non-agricultural performance standards promulgated in rules by the Wisconsin Department of Natural Resources under s. NR 151.004, Wis. Adm. Code.

S. 02 FINDINGS OF FACT.

The [governing body] acknowledges that uncontrolled, post-construction runoff has a significant impact upon water resources; the health, safety, and general welfare of the community; and diminishes the public enjoyment and use of natural resources. Specifically, uncontrolled post-construction runoff can do all of the following:

- (1) Degrade physical stream habitat by increasing stream bank erosion, increasing streambed scour, diminishing groundwater recharge, diminishing stream base flows, and increasing stream temperature.
- (2) Diminish the capacity of lakes and streams to support fish, aquatic life, and recreational and water supply uses by increasing pollutant loading of sediment, suspended solids, nutrients, heavy metals, bacteria, pathogens, and other urban pollutants.
- (3) Alter wetland communities by changing wetland hydrology and increasing pollutant loads.
- (4) Reduce the quality of groundwater by increasing pollutant loading.
- (5) Threaten public health, safety, property, and general welfare by overtaxing storm sewers, drainage ways, and other minor drainage facilities.

S. 03 PURPOSE AND INTENT.

- (1) **PURPOSE.** The general purpose of this ordinance is to establish long-term, post-construction runoff management requirements that will diminish the threats to public health, safety, welfare, and the aquatic environment. Specific purposes are to do all of the following:
- (a) Further the maintenance of safe and healthful conditions.
 - (b) Prevent and control the adverse effects of storm water; prevent and control soil erosion; prevent and control water pollution; protect spawning grounds, fish, and aquatic life; control building sites, placement of structures, and land uses; preserve ground cover and scenic beauty; and promote sound economic growth.
 - (c) Control exceedance of the safe capacity of existing drainage facilities and receiving water bodies; prevent undue channel erosion; and control increases in the scouring and transportation of particulate matter.

- (d) Minimize the amount of pollutants discharged from the separate storm sewer to protect the waters of the state.
- (2) INTENT. It is the intent of the [governing body] that this ordinance regulates post-construction storm water discharges to waters of the state. This ordinance may be applied on a site-by-site basis. The [governing body] recognizes, however, that the preferred method of achieving the storm water performance standards set forth in this ordinance is through the preparation and implementation of comprehensive, systems-level storm water management plans that cover hydrologic units, such as watersheds, on a municipal and regional scale. Such plans may prescribe regional storm water devices, practices, or systems, any of which may be designed to treat runoff from more than one site prior to discharge to waters of the state. When such plans are in conformance with the performance standards developed under s. 281.16, Wis. Stats., for regional storm water management measures and have been approved by the [governing body], it is the intent of this ordinance that the approved storm water management plan be used to identify post-construction management measures acceptable for the community.

S. 04 APPLICABILITY AND JURISDICTION.

(1) APPLICABILITY.

- (a) Except as provided under par. (b), this ordinance applies to a post-construction site on which one acre or more of land disturbing construction activity occurs during construction.

Note to Users: *The one acre land disturbance threshold is consistent with state and federal laws regarding applicability of construction site erosion and sediment control permits. The municipality may apply its ordinance to sites of less than one acre.*

- (b) A site that meets any of the criteria in this paragraph is exempt from the requirements of this ordinance:
1. A post-construction site with less than ten percent connected imperviousness, based on the area of land disturbance, provided the cumulative area of all impervious surfaces is less than one acre. However, the exemption of this subdivision does not include exemption from the protective area standard of this ordinance.
 2. Agricultural facilities and practices.
 3. Underground utility construction, but not including the construction of any above ground structures associated with utility construction.
- (c) Notwithstanding the applicability requirements in par. (a), this ordinance applies to post-construction sites of any size that, as determined by the [administering authority], are likely to result in runoff that exceeds the safe capacity of the existing drainage facilities or receiving body of water, causes undue channel erosion, or increases water pollution by scouring or the transportation of particulate matter.

(2) JURISDICTION.

This ordinance applies to post-construction sites within the boundaries and jurisdiction of the [name of the municipality];

or

post-construction sites within the boundaries and jurisdiction of the [name of municipality], as well as the extraterritorial division of land subject to an ordinance enacted pursuant to s. 236.45 (2) and (3), Wis. Stats.;

or

post-construction sites within the boundaries and jurisdiction of the [name of the municipality], as well as all lands located within the extraterritorial plat approval jurisdiction of the [name of municipality], even if plat approval is not involved].

Note to Users: *These options differ in the amount of land area covered by this ordinance and may have ramifications for enforcement authority. For counties, the first option will be the only option since counties do not have extraterritorial authority. Under s. 59.693 (10), Wis. Stats., if a county storm water management ordi-*

nance exists at the time of annexation, then the municipal ordinance must be at least as restrictive as the county ordinance.

(3) EXCLUSIONS.

This ordinance is not applicable to activities conducted by a state agency, as defined under s. 227.01 (1), Wis. Stats.

S. 045 SUBDIVISION AND NUMBERING OF THIS ORDINANCE; WORD USAGE

- (1) This ordinance is divided into sections designated by boldface numerals and abbreviated “S.”. Sections may be divided into subsections designated by numerals in parentheses and abbreviated “sub.” Subsections may be divided into paragraphs designated by lower case letters in parentheses and abbreviated “(par.)” Paragraphs may be divided into subdivisions designated by numerals followed by a period and abbreviated “subd.” Subdivisions may be further subdivided into paragraphs designated by lower case letters followed by a period and those paragraphs may lowercase Roman numerals, which are abbreviated in the form “subd. 1. a.” and “subd. 1. a. i.,” respectively. Reference to a “section,” “subsection,” “paragraph,” or “subdivision” includes all divisions of the referenced section, subsection, paragraph, or subdivision.
- (2) The singular includes the plural, and the plural includes the singular. The present tense of a verb includes the future when applicable. The future perfect tense includes past and future tenses.

S. 05 DEFINITIONS. In this ordinance:

- (1) “Adequate sod or self-sustaining vegetative cover” means maintenance of sufficient vegetation types and densities such that the physical integrity of the streambank or lakeshore is preserved. “Self-sustaining vegetative cover” includes grasses, forbs, sedges, and duff layers of fallen leaves and woody debris.
- (2) “Administering authority” means a governmental employee, or a regional planning commission empowered under s. [59.693; 60.627; 61.354; or 62.234], Wis. Stats., that is designated by the [governing body] to administer this ordinance.
- (3) “Agricultural facilities and practices” has the meaning given in s. 281.16 (1), Wis. Stats.
- (4) “Atlas 14” means the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Precipitation-Frequency Atlas of the United States, Volume 8 (Midwestern States), published in 2013.
- (5) “Average annual rainfall” means a typical calendar year of precipitation as determined by the Wisconsin Department of Natural Resources for users of models such as WinSLAMM, P8 or equivalent methodology. The average annual rainfall is chosen from a department publication for the location closest to the municipality.
- (6) “Best management practice” or “BMP” means structural or non-structural measures, practices, techniques, or devices employed to avoid or minimize sediment or pollutants carried in runoff to waters of the state.
- (7) “Business day” means a day the office of the [administering authority] is routinely and customarily open for business.
- (8) “Cease and desist order” means a court-issued order to halt land disturbing construction activity that is being conducted without the required permit or in violation of a permit issued by the [administering authority].
- (9) “Combined sewer system” means a system for conveying both sanitary sewage and storm water runoff.
- (10) “Connected imperviousness” means an impervious surface connected to the waters of the state via a separate storm sewer, an impervious flow path, or a minimally pervious flow path.
- (11) “Design storm” means a hypothetical discrete rainstorm characterized by a specific duration, temporal distribution, rainfall intensity, return frequency, and total depth of rainfall.
- (12) “Development” means residential, commercial, industrial, or institutional land uses and associated roads.
- (13) “Direct conduits to groundwater” means wells, sinkholes, swallets, fractured bedrock at the surface, mine shafts, non-metallic mines, tile inlets discharging to groundwater, quarries, or depressional groundwater recharge areas over shallow fractured bedrock.
- (14)* “Division of land” means the creation from one parcel of [number] or more parcels or building sites of [num-

ber] or fewer acres each in area when such creation occurs at one time or through the successive partition within a 5-year period.

Note to Users: *This definition is only needed depending on the type of jurisdiction selected under S. 04 (2) above.*

- (15) “Effective infiltration area” means the area of the infiltration system that is used to infiltrate runoff and does not include the area used for site access, berms, or pretreatment.
- (16) “Erosion” means the process by which the land’s surface is worn away by the action of wind, water, ice, or gravity.
- (17) “Exceptional resource waters” means waters listed in s. NR 102.11, Wis. Adm. Code.
- (18)* “Extraterritorial” means the unincorporated area within three miles of the corporate limits of a first, second, or third class city, or within one and a half miles of a fourth class city or village.

Note to Users: *This definition is only needed depending on the type of jurisdiction selected under S. 04 (2) above.*

- (19) “Filtering layer” means soil that has at least a 3-foot deep layer with at least 20 percent fines; or at least a 5-foot deep layer with at least 10 percent fines; or an engineered soil with an equivalent level of protection as determined by the regulatory authority for the site.
- (20) “Final stabilization” means that all land disturbing construction activities at the construction site have been completed and that a uniform perennial vegetative cover has been established with a density of at least 70 percent of the cover for the unpaved areas and areas not covered by permanent structures or that employ equivalent permanent stabilization measures.
- (21) “Financial guarantee” means a performance bond, maintenance bond, surety bond, irrevocable letter of credit, or similar guarantees submitted to the [administering authority] by the responsible party to assure that requirements of the ordinance are carried out in compliance with the storm water management plan.
- (22) “Impervious surface” means an area that releases as runoff all or a large portion of the precipitation that falls on it, except for frozen soil. Rooftops, sidewalks, driveways, gravel or paved parking lots and streets are examples of areas that typically are impervious.
- (23) “In-fill” means an undeveloped area of land located within an existing urban sewer service area, surrounded by development or development and natural or man-made features where development cannot occur.
- (24) “Infiltration” means the entry of precipitation or runoff into or through the soil.
- (25) “Infiltration system” means a device or practice such as a basin, trench, rain garden, or swale designed specifically to encourage infiltration, but does not include natural infiltration in pervious surfaces such as lawns, redirecting of rooftop downspouts onto lawns, or minimal infiltration from practices, such as swales or road side channels designed for conveyance and pollutant removal only.
- (26) “Land disturbing construction activity” means any man-made alteration of the land surface resulting in a change in the topography or existing vegetative or non-vegetative soil cover that may result in runoff and lead to an increase in soil erosion and movement of sediment into waters of the state. “Land disturbing construction activity” includes clearing and grubbing, demolition, excavating, pit trench dewatering, filling, and grading activities.
- (27) “Landowner” means any person holding fee title, an easement, or another interest in property that allows the person to undertake cropping, livestock management, land disturbing construction activity, or maintenance of storm water BMPs on the property.
- (28) “Maintenance agreement” means a legal document that provides for long-term maintenance of storm water management practices.
- (29) “Maximum extent practicable” means the highest level of performance that is achievable but is not equivalent to a performance standard identified in this ordinance as determined in accordance with S. 055 of this ordinance.
- (30) “New development” means development resulting from the conversion of previously undeveloped land or agricultural land uses.

Published under s. 35.93, Stats. Updated on the first day of each month. Entire code is always current. The Register date on each page is the date the chapter was last published.

- (31) “NRCS MSE3 or MSE4 distribution” means a specific precipitation distribution developed by the United States Department of Agriculture, Natural Resources Conservation Service, using precipitation data from Atlas 14.
- (32) “Off-site” means located outside the property boundary described in the permit application.
- (33) “On-site” means located within the property boundary described in the permit application.
- (34) “Ordinary high-water mark” has the meaning given in s. NR 115.03 (6), Wis. Adm. Code.
- (35) “Outstanding resource waters” means waters listed in s. NR 102.10, Wis. Adm. Code.
- (36) “Percent fines” means the percentage of a given sample of soil that passes through a # 200 sieve.
- (37) “Performance standard” means a narrative or measurable number specifying the minimum acceptable outcome for a facility or practice.
- (38) “Permit” means a written authorization made by the [administering authority] to the applicant to conduct land disturbing construction activity or to discharge post-construction runoff to waters of the state.
- (39) “Permit administration fee” means a sum of money paid to the [administering authority] by the permit applicant for the purpose of recouping the expenses incurred by the authority in administering the permit.
- (40) “Pervious surface” means an area that releases as runoff a small portion of the precipitation that falls on it. Lawns, gardens, parks, forests, or other similar vegetated areas are examples of surfaces that typically are pervious.
- (41) “Pollutant” has the meaning given in s. 283.01 (13), Wis. Stats.
- (42) “Pollution” has the meaning given in s. 281.01 (10), Wis. Stats.
- (43) “Post-construction site” means a construction site following the completion of land disturbing construction activity and final site stabilization.
- (44) “Pre-development condition” means the extent and distribution of land cover types present before the initiation of land disturbing construction activity, assuming that all land uses prior to development activity are managed in an environmentally sound manner.
- (45) “Preventive action limit” has the meaning given in s. NR 140.05 (17), Wis. Adm. Code.
- (46) “Protective area” means an area of land that commences at the top of the channel of lakes, streams, and rivers, or at the delineated boundary of wetlands, and that is the greatest of the following widths, as measured horizontally from the top of the channel or delineated wetland boundary to the closest impervious surface.
- (47) “Redevelopment” means areas where development is replacing older development.
- (48) “Responsible party” means the landowner or any other entity performing services to meet the requirements of this ordinance through a contract or other agreement.
- (49) “Runoff” means storm water or precipitation including rain, snow or ice melt or similar water that moves on the land surface via sheet or channelized flow.
- (50) “Separate storm sewer” means a conveyance or system of conveyances including roads with drainage systems, streets, catch basins, curbs, gutters, ditches, constructed channels, or storm drains that meets all of the following criteria:
- (a) Is designed or used for collecting water or conveying runoff.
 - (b) Is not part of a combined sewer system.
 - (c) Is not part of a publicly owned wastewater treatment works that provides secondary or more stringent treatment.
 - (d) Discharges directly or indirectly to waters of the state.
- (51) “Silviculture activity” means activities including tree nursery operations, tree harvesting operations, refor-

estation, tree thinning, prescribed burning, and pest and fire control. Clearing and grubbing of an area of a construction site is not a “silviculture activity.”

- (52) “Site” means the entire area included in the legal description of the land on which the land disturbing construction activity occurred.
- (53) “Stop work order” means an order issued by the [administering authority] that requires that all construction activity on the site be stopped.
- (54) “Storm water management plan” means a comprehensive plan designed to reduce the discharge of pollutants from storm water, after the site has undergone final stabilization, following completion of the construction activity.
- (55) “Storm water management system plan” means a comprehensive plan designed to reduce the discharge of runoff and pollutants from hydrologic units on a regional or municipal scale.
- (56) “Technical standard” means a document that specifies design, predicted performance and operation and maintenance specifications for a material, device, or method.
- (57) “Top of the channel” means an edge, or point on the landscape landward from the ordinary high-water mark of a surface water of the state, where the slope of the land begins to be less than 12 percent continually for at least 50 feet. If the slope of the land is 12 percent or less continually for the initial 50 feet landward from the ordinary high-water mark, the “top of the channel” is the ordinary high-water mark.
- (58) “Total maximum daily load” or “TMDL” means the amount of pollutants specified as a function of one or more water quality parameters, that can be discharged per day into a water quality limited segment and still ensure attainment of the applicable water quality standard.
- (59) “TP-40” means Technical Paper No. 40, Rainfall Frequency Atlas of the United States, published in 1961.
- (60) “TR-55” means the United States Department of Agriculture, Natural Resources Conservation Service (previously soil conservation service), Urban Hydrology for Small Watersheds, Second Edition, Technical Release 55, June 1986, that is incorporated by reference for this chapter.
- (61) “Transportation facility” means a highway, a railroad, a public mass transit facility, a public-use airport, a public trail, or any other public work for transportation purposes such as harbor improvements under s. 85.095 (1) (b), Wis. Stats. “Transportation facility” does not include building sites for the construction of public buildings and buildings that are places of employment that are regulated by the Wisconsin Department of Natural Resources pursuant to s. 281.33, Wis. Stats.
- (62) “TSS” means total suspended solids.
- (63) “Type II distribution” means a rainfall type curve as established in the “United States Department of Agriculture, Soil Conservation Service, Technical Paper 149, published in 1973.”
- (64) “Waters of the state” includes those portions of Lake Michigan and Lake Superior within the boundaries of this state, and all lakes, bays, rivers, streams, springs, ponds, wells, impounding reservoirs, marshes, watercourses, drainage systems, and other surface water or groundwater, natural or artificial, public or private, within this state or its jurisdiction.
- (65) “Wis. Adm. Code” means the Wisconsin Administrative Code, published under s. 35.93, Wis. Stats.
- (66) “Wis. Stats.” means the Wisconsin Statutes published under s. 35.18 of the Wisconsin Statutes.

S. 055 APPLICABILITY OF MAXIMUM EXTENT PRACTICABLE.

Maximum extent practicable applies when a person who is subject to a performance standard of this ordinance demonstrates to the [administering authority]’s satisfaction that a performance standard is not achievable and that a lower level of performance is appropriate. In making the assertion that a performance standard is not achievable and that a level of performance different from the performance standard is the maximum extent practicable, the responsible party shall take into account the best available technology, cost effectiveness, geographic features, and other competing interests such as protection of public safety and welfare, protection of endangered and threatened resources, and preservation of historic properties.

S. 06 TECHNICAL STANDARDS.

The following methods shall be used in designing the water quality, peak discharge, and infiltration components of storm water practices needed to meet the water quality standards of this ordinance:

- (1) The use of the standards are consistent with the technical standards identified, developed, or disseminated by the Wisconsin Department of Natural Resources under subch. V of ch. NR 151, Wis. Adm. Code.
- (2) When technical standards have not been identified or developed by the Wisconsin Department of Natural Resources, other technical standards may be used provided that the methods have been approved by the [administering authority].

Note to Users: *Pollutant loading models such as DETPOND, WinSLAMM, P8, or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids. Use the most recent version of the model, rainfall files, and other parameter files identified for Wisconsin users unless directed otherwise by the regulatory authority.*

S. 07 PERFORMANCE STANDARDS.

- (1) RESPONSIBLE PARTY. The responsible party shall comply with this section.
- (2) STORM WATER MANAGEMENT PLAN. A written storm water management plan in accordance with S. 09 shall be developed and implemented for each post-construction site.
- (3) MAINTENANCE OF EFFORT. For redevelopment sites where the redevelopment will be replacing older development that was subject to post-construction performance standards of ch. NR 151, Wis. Adm. Code, in effect on or after October 1, 2004, the responsible party shall meet the total suspended solids reduction, peak flow control, infiltration, and protective areas standards applicable to the older development or meet the redevelopment standards of this ordinance, whichever is more stringent.
- (4) REQUIREMENTS. The storm water management plan required under sub. (2) shall include all of the following:
 - (a) **TOTAL SUSPENDED SOLIDS.** BMPs shall be designed, installed, and maintained to control total suspended solids carried in runoff from the post-construction site as follows:

Note to Users: *Under s. 281.33 (6) (a) 2., Wis. Stats., the municipality may enact and enforce provisions of an ordinance that are stricter than the TSS performance standards in ch. NR 151, Wis. Adm. Code, if the stricter provisions are necessary to comply with federally-approved total maximum daily load requirements.*

1. **BEST MANAGEMENT PRACTICE DESIGN.** BMPs shall be designed in accordance with Table 1. or to the maximum extent practicable as provided in subd. 2. The design shall be based on an average annual rainfall, as compared to no runoff management controls.

Table 1. TSS Reduction Standards	
Development Type	TSS Reduction
New Development	80 percent
In-fill development	80 percent
Redevelopment	40 percent of load from parking areas and roads

2. **MAXIMUM EXTENT PRACTICABLE.** If the design cannot meet a total suspended solids reduction performance standard of Table 1., the storm water management plan shall include a written, site-specific explanation of why the total suspended solids reduction performance standard cannot be met and why the total suspended solids load will be reduced only to the maximum extent practicable.

Note to Users: *Pollutant loading models such as DETPOND, WinSLAMM, P8 or equivalent methodology may be used to evaluate the efficiency of the design in reducing total suspended solids. Use the most recent version of the model, rainfall files, and other parameter files identified for Wisconsin users unless directed otherwise by the regulatory authority.*

3. OFF-SITE DRAINAGE. When designing BMPs, runoff draining to the BMP from off-site shall be taken into account in determining the treatment efficiency of the practice. Any impact on the efficiency shall be compensated for by increasing the size of the BMP accordingly.

(b) **PEAK DISCHARGE.**

Note to Users: Under s. 281.33 (6) (a) 1., Wis. Stats., the municipality may enact and enforce provisions of an ordinance that are stricter than the peak discharge performance standards in ch. NR 151, Wis. Adm. Code, if the stricter provisions are necessary to [http://docs.legis.wisconsin.gov/document/statutes/281.33\(6\)\(a\)1](http://docs.legis.wisconsin.gov/document/statutes/281.33(6)(a)1). control storm water quantity or control flooding.

1. By design, BMPs shall be employed to maintain or reduce the 1-year, 24-hour; the 2-year, 24-hour post-construction peak runoff discharge rates to the 1-year, 24-hour; and the 2-year, 24-hour pre-development peak runoff discharge rates respectively, or to the maximum extent practicable. The runoff curve numbers in Table 2. shall be used to represent the actual pre-development conditions. Peak discharges shall be calculated using TR-55 runoff curve number methodology, Atlas 14 precipitation depths, and the appropriate NRCS Wisconsin MSE3 or MSE4 precipitation distribution. On a case-by-case basis, the [administering authority] may allow the use of TP-40 precipitation depths and the Type II distribution.

Note to Users: For determining compliance with the peak flow requirement, the Wisconsin Department of Natural Resources recommends use of the National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Precipitation Frequency Estimates for precipitation depth. The Natural Resources Conservation Service (NRCS) – Wisconsin has calculated county-specific Atlas 14 precipitation depths and they are to be used in combination with the appropriate NRCS MSE3 or MSE4 precipitation distribution. The NRCS calculated county-specific Atlas 14 precipitation depths and MSE3 and MSE4 precipitation distributions are available at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/engineering/?cid=nrcs142p2_025417.

Runoff Curve Number	Hydrologic Soil Group			
	A	B	C	D
Woodland	30	55	70	77
Grassland	39	61	71	78
Cropland	55	69	78	83

Note to Users: When the pre-development condition is a combination of woodland, grassland, or cropland, the runoff curve number should be pro-rated by area.

2. This subsection of the ordinance does not apply to any of the following:
 - a. A post-construction site where the discharge is directly into a lake over 5,000 acres or a stream or river segment draining more than 500 square miles.
 - b. Except as provided under S. 07 (3), a redevelopment post-construction site.
 - c. An in-fill development area less than 5 acres.

Note to Users: *The intent of the peak discharge standard is to minimize stream bank erosion, under bank-full conditions. For water quantity concerns, the post-development peak flow rate for the 10-, 25-, 50-, and 100-year – 24-hour storm events should also be controlled either at or below pre-development discharge rates. This has not been addressed in this model ordinance but may need to be included in the local ordinance to address local flood control issues.*

(c) **INFILTRATION.**

1. **BEST MANAGEMENT PRACTICES.** BMPs shall be designed, installed, and maintained to infiltrate runoff in accordance with the following or to the maximum extent practicable:
 - a. *Low imperviousness.* For development up to 40 percent connected imperviousness, such as parks, cemeteries, and low density residential development, infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 90 percent of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than one percent of the post-construction site is required as an effective infiltration area.
 - b. *Moderate imperviousness.* For development with more than 40 percent and up to 80 percent connected imperviousness, such as medium and high density residential, multi-family development, industrial and institutional development, and office parks, infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 75 percent of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than 2 percent of the post-construction site is required as an effective infiltration area.
 - c. *High imperviousness.* For development with more than 80 percent connected imperviousness, such as commercial strip malls, shopping centers, and commercial downtowns, infiltrate sufficient runoff volume so that the post-development infiltration volume shall be at least 60 percent of the pre-development infiltration volume, based on an average annual rainfall. However, when designing appropriate infiltration systems to meet this requirement, no more than 2 percent of the post-construction site is required as an effective infiltration area.
2. **PRE-DEVELOPMENT.** The pre-development condition shall be the same as specified in Table 2 of the Peak Discharge section of this ordinance.
3. **SOURCE AREAS.**
 - a. *Prohibitions.* Runoff from the following areas may not be infiltrated and may not qualify as contributing to meeting the requirements of this section unless demonstrated to meet the conditions identified in S. 07 (4) (c) 6.:
 - i. Areas associated with a tier 1 industrial facility identified in s. NR 216.21 (2) (a), Wis. Adm. Code, including storage, loading, and parking. Rooftops may be infiltrated with the concurrence of the regulatory authority.

- ii. Storage and loading areas of a tier 2 industrial facility identified in s. [NR 216.21 \(2\) \(b\)](#), Wis. Adm. Code.

Note to Users: *Runoff from the employee and guest parking and rooftop areas of a tier 2 facility may be infiltrated but runoff from the parking area may require pretreatment.*

- iii. Fueling and vehicle maintenance areas. Runoff from rooftops of fueling and vehicle maintenance areas may be infiltrated with the concurrence of the regulatory authority.

- b. *Exemptions.* Runoff from the following areas may be credited toward meeting the requirement when infiltrated, but the decision to infiltrate runoff from these source areas is optional:
 - i. Parking areas and access roads less than 5,000 square feet for commercial development.
 - ii. Parking areas and access roads less than 5,000 square feet for industrial development not subject to the Prohibitions under par a.
 - iii. Except as provided under S. 07 (3), redevelopment post-construction sites.
 - iv. In-fill development areas less than 5 acres.
 - v. Roads on commercial, industrial, and institutional land uses; and arterial residential roads.

4. LOCATION OF PRACTICES.

- a. *Prohibitions.* Infiltration practices may not be located in the following areas:
 - i. Areas within 1000 feet upgradient or within 100 feet downgradient of direct conduits to groundwater.
 - ii. Areas within 400 feet of a community water system well as specified in s. [NR 811.16 \(4\)](#), Wis. Adm. Code, or within the separation distances listed in s. [NR 812.08](#), Wis. Adm. Code, for any private well or non-community well for runoff infiltrated from commercial, including multi-family residential, industrial and institutional land uses, or regional devices for one- and two-family residential development.
 - iii. Areas where contaminants of concern, as defined in s. [NR 720.03 \(2\)](#), Wis. Adm. Code, are present in the soil through which infiltration will occur.

- b. *Separation distances.*
 - i. Infiltration practices shall be located so that the characteristics of the soil and the separation distance between the bottom of the infiltration system and the elevation of seasonal high groundwater or the top of bedrock are in accordance with Table 3:

Table 3. Separation Distances and Soil Characteristics		
Source Area	Separation Distance	Soil Characteristics
Industrial, Commercial, Institutional Parking Lots and Roads	5 feet or more	Filtering Layer
Residential Arterial Roads	5 feet or more	Filtering Layer
Roofs Draining to Subsurface Infiltration Practices	1 foot or more	Native or Engineered Soil with Particles Finer than Coarse Sand
Roofs Draining to Surface Infiltration Practices	Not Applicable	Not Applicable
All Other Impervious Source Areas	3 feet or more	Filtering Layer

- ii. Notwithstanding subd 4. b. ii, applicable requirements for injection wells classified under ch. NR 815, Wis. Adm. Code, shall be followed.
- c. *Infiltration rate exemptions.* Infiltration practices located in the following areas may be credited toward meeting the requirements under the following conditions, but the decision to infiltrate under any of the following conditions is optional:
 - i. Where the infiltration rate of the soil measured at the proposed bottom of the infiltration system is less than 0.6 inches per hour using a scientifically credible field test method.
 - ii. Where the least permeable soil horizon to 5 feet below the proposed bottom of the infiltration system using the U.S. Department of Agriculture method of soils analysis is one of the following: sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, or clay.
- 5. ALTERNATE USE. Where alternate uses of runoff are employed, such as for toilet flushing, laundry, or irrigation or storage on green roofs where an equivalent portion of the runoff is captured permanently by rooftop vegetation, such alternate use shall be given equal credit toward the infiltration volume required by this section.
- 6. GROUNDWATER STANDARDS.
 - a. Infiltration systems designed in accordance with this section shall, to the extent technically and economically feasible, minimize the level of pollutants infiltrating to groundwater and shall maintain compliance with the preventive action limit at a point of standards application in accordance with ch. NR 140, Wis. Adm. Code. However, if site specific information indicates that compliance with a preventive action limit is not achievable, the infiltration BMP may not be installed or shall be modified to prevent infiltration to the maximum extent practicable.
 - b. Notwithstanding subd. 6. a., the discharge from BMPs shall remain below the enforcement standard at the point of standards application.
- 7. PRETREATMENT. Before infiltrating runoff, pretreatment shall be required for parking lot runoff and for runoff from new road construction in commercial, industrial, and institutional areas that will enter an infiltration system. The pretreatment shall be designed to protect the infiltration system from clogging prior to scheduled maintenance and to protect groundwater quality in accordance with subd. 6. Pre-

treatment options may include, but are not limited to, oil and grease separation, sedimentation, biofiltration, filtration, swales, or filter strips.

8. MAXIMUM EXTENT PRACTICABLE. Where the conditions of subds. 3. and 4. limit or restrict the use of infiltration practices, the performance standard of S. 07 (4) (c) shall be met to the maximum extent practicable.

(d) PROTECTIVE AREAS.

9. DEFINITION. In this paragraph, “protective area” means an area of land that commences at the top of the channel of lakes, streams, and rivers, or at the delineated boundary of wetlands, and that is the greatest of any of the following widths, as measured horizontally from the top of the channel or delineated wetland boundary to the closest impervious surface. However, in this section, “protective area” does not include any area of land adjacent to any stream enclosed within a pipe or culvert, so that runoff cannot enter the enclosure at this location.
- a. For outstanding resource waters and exceptional resource waters, 75 feet.
 - b. For perennial and intermittent streams identified on a U.S. Geological Survey 7.5-minute series topographic map, or a county soil survey map, whichever is more current, 50 feet.
 - c. For lakes, 50 feet.
 - d. For wetlands not subject to subd. 1. e. or f., 50 feet.
 - e. For highly susceptible wetlands, 75 feet. Highly susceptible wetlands include the following types: calcareous fens, sedge meadows, open and coniferous bogs, low prairies, coniferous swamps, lowland hardwood swamps, and ephemeral ponds.
 - f. For less susceptible wetlands, 10 percent of the average wetland width, but no less than 10 feet nor more than 30 feet. Less susceptible wetlands include: degraded wetland dominated by invasive species such as reed canary grass; cultivated hydric soils; and any gravel pits, or dredged material or fill material disposal sites that take on the attributes of a wetland.
 - g. In subd. 1 d. to f., determinations of the extent of the protective area adjacent to wetlands shall be made on the basis of the sensitivity and runoff susceptibility of the wetland in accordance with the standards and criteria in s. NR 103.03, Wis. Adm. Code.
 - h. Wetland boundary delineation shall be made in accordance with s. NR 103.08 (1m), Wis. Adm. Code. This subd. 1. h. does not apply to wetlands that have been completely filled in compliance with all applicable state and federal regulations. The protective area for wetlands that have been partially filled in compliance with all applicable state and federal regulations shall be measured from the wetland boundary delineation after a fill has been placed. Where there is a legally authorized wetland fill, the protective area standard need not be met in that location.
 - i. For concentrated flow channels with drainage areas greater than 130 acres, 10 feet.
 - j. Notwithstanding subd. 1. a. to i., the greatest protective area width shall apply where rivers, streams, lakes, and wetlands are contiguous.

Note to Users: *A stream or lake is not eligible for a lower protective area width even if contiguous to a less susceptible wetland.*

10. APPLICABILITY. This section applies to post-construction sites located within a protective area, except those areas exempted pursuant to subd. 4.
11. REQUIREMENTS. All of the following requirements shall be met:
- a. Impervious surfaces shall be kept out of the protective area entirely or to the maximum extent practicable. If there is no practical alternative to locating an impervious surface in the protective area, the storm water management plan shall contain a written, site-specific explanation.
 - b. Where land disturbing construction activity occurs within a protective area, adequate sod or self-sustaining vegetative cover of 70 percent or greater shall be established and maintained where no impervious surface is present. The adequate sod or self-sustaining vegetative cover shall be sufficient to provide for bank stability, maintenance of fish habitat, and filtering of pollutants from upslope overland flow areas under sheet flow conditions. Non-vegetative materials, such as rock riprap, may be employed on the bank as necessary to prevent erosion such as on steep slopes or where high velocity flows occur.

Note to Users: *It is recommended that seeding of non-invasive vegetative cover be used in the protective areas. Some invasive plants that should not be used are listed in ch. NR 40, Wis. Adm. Code. Flood and drought-tolerant vegetation that can provide long-term bank stability because of an extensive root system is preferable. Vegetative cover may be measured using the line transect method described in the University of Wisconsin extension publication number A3533, titled "Estimating Residue Using the Line Transect Method."*
 - c. BMPs such as filter strips, swales, or wet detention ponds, that are designed to control pollutants from non-point sources, may be located in the protective area.

Note to Users: *Other laws, such as ch. 30, Wis. Stats., and ch. NR 103, 115, 116, and 117, Wis. Adm. Code, and their associated review and approval processes may apply in the protective area.*
12. EXEMPTIONS. This section does not apply to any of the following:
- a. Except as provided under S. 07 (3), redevelopment post-construction sites.
 - b. In-fill development areas less than 5 acres.
 - c. Structures that cross or access surface water such as boat landings, bridges, and culverts.
 - d. Structures constructed in accordance with s. 59.692 (1v), Wis. Stats.
 - e. Areas of post-construction sites from which the runoff does not enter the surface water, including wetlands, without first being treated by a BMP to meet the local ordinance requirements for total suspended solids and peak flow reduction, except to the extent that vegetative ground cover is necessary to maintain bank stability.

Note to Users: *A vegetated protective area to filter runoff pollutants from post-construction sites described in par. (e) is not necessary since the runoff at that location is treated prior to entering*

the surface water. Other practices necessary to meet the requirements of this section, such as a swale or pond, will need to be designed and implemented to reduce runoff pollutants prior to runoff entering a surface water of the state.

- (e) **FUELING AND MAINTENANCE AREAS.** Fueling and vehicle maintenance areas shall have BMPs designed, installed, and maintained to reduce petroleum within runoff, so that the runoff that enters waters of the state contains no visible petroleum sheen, or to the maximum extent practicable.

Note to Users: *A combination of the following BMPs may be used: oil and grease separators, canopies, petroleum spill cleanup materials, or any other structural or non-structural method of preventing or treating petroleum in runoff.*

Note to Users: *The following paragraph, “Swale Treatment for Transportation Facilities,” is optional.*

- (f) **SWALE TREATMENT FOR TRANSPORTATION FACILITIES.**

1. **REQUIREMENT.** Except as provided in subd. 2., transportation facilities that use swales for runoff conveyance and pollutant removal are exempt from the requirements of local ordinance requirements for peak flow control, total suspended solids control, and infiltration, if the swales are designed to do all of the following or to the maximum extent practicable:

- a. Swales shall be vegetated. However, where appropriate, non-vegetative measures may be employed to prevent erosion or provide for runoff treatment, such as rock riprap stabilization or check dams.

Note to Users: *It is preferred that tall and dense vegetation be maintained within the swale due to its greater effectiveness at enhancing runoff pollutant removal.*

- b. Swales shall comply with sections V.F. (Velocity and Depth) and V.G. (Swale Geometry Criteria) with a swale treatment length as long as that specified in section V.C. (Pre-Treatment) of the Wisconsin Department of Natural Resources technical standard 1005 “Vegetated Swale,” dated September 2016, or a superseding document. Transportation facility swale treatment does not have to comply with other sections of technical standard 1005.

2. **OTHER REQUIREMENTS.**

- i. Notwithstanding subd. 1., the [administering authority] may, consistent with water quality standards, require that other requirements, in addition to swale treatment, be met on a transportation facility with an average daily traffic rate greater than 2,500 and where the initial surface water of the state that the runoff directly enters is any of the following:

ii. An outstanding resource water.

ii. An exceptional resource water.

iii. Waters listed in section 303 (d) of the Federal Clean Water Act that are identified as impaired in whole or in part, due to non-point source impacts.

iv. Water where targeted performance standards are developed pursuant to s. NR 151.004, Wis. Adm. Code.

- b. The transportation facility authority shall contact the [administering

authority] to determine if additional BMPs beyond a water quality swale are needed under this paragraph.

- (5) GENERAL CONSIDERATIONS FOR STORM WATER MANAGEMENT MEASURES. All of the following considerations shall be observed in on-site and off-site runoff management:
- (a) Natural topography and land cover features such as natural swales, natural depressions, native soil infiltrating capacity, and natural groundwater recharge areas shall be preserved and used, to the extent possible, to meet the requirements of this section.
 - (b) Emergency overland flow for all storm water facilities shall be provided to prevent exceeding the safe capacity of downstream drainage facilities and prevent endangerment of downstream property or public safety.
- (6) BMP LOCATION.
- (a) To comply with the performance standards required under S. 07 of this ordinance, BMPs may be located on-site or off-site as part of a regional storm water device, practice or system, but shall be installed in accordance with s. NR 151.003, Wis. Adm. Code.

Note to Users: *This section does not supersede any other applicable federal, state or local regulation such as ch. NR 103, Wis. Adm. Code, and ch. 30, Wis. Stats.*
 - (b) The [administering authority] may approve off-site management measures provided that all of the following conditions are met:
 - 1. The [administering authority] determines that the post-construction runoff is covered by a storm water management system plan that is approved by the [name of municipality] and that contains management requirements consistent with the purpose and intent of this ordinance.
 - 2. The off-site facility meets all of the following conditions:
 - a. The facility is in place.
 - b. The facility is designed and adequately sized to provide a level of storm water control equal to or greater than that which would be afforded by on-site practices meeting the performance standards of this ordinance.
 - c. The facility has a legally obligated entity responsible for its long-term operation and maintenance.
 - (c) Where a regional treatment option exists such that the [administering authority] exempts the applicant from all or part of the minimum on-site storm water management requirements, the applicant shall be required to pay a fee in an amount determined in negotiation with the [administering authority]. In determining the fee for post-construction runoff, the [administering authority] shall consider an equitable distribution of the cost for land, engineering design, construction, and maintenance of the regional treatment option.
- (7) ADDITIONAL REQUIREMENTS. The [administering authority] may establish storm water management requirements more stringent than those set forth in this ordinance if the [administering authority] determines that the requirements are needed to control storm water quantity or control flooding, comply with federally approved total maximum daily load requirements, or control pollutants associated with existing development or redevelopment.

S. 08 PERMITTING REQUIREMENTS, PROCEDURES, AND FEES.

- (1) PERMIT REQUIRED. No responsible party may undertake a land disturbing construction activity without receiving a post-construction runoff permit from the [administering authority] prior to commencing the proposed activity.
- (2) PERMIT APPLICATION AND FEES. Unless specifically excluded by this ordinance, any responsible party desiring a permit shall submit to the [administering authority] a permit application on a form provided by the [administering authority] for that purpose, subject to all of the following:

- (a) Unless otherwise excluded by this ordinance, a permit application must be accompanied by a storm water management plan, a maintenance agreement, and a non-refundable permit administration fee.
 - (b) The storm water management plan shall be prepared to meet the requirements of S. 07 and S. 09, the maintenance agreement shall be prepared to meet the requirements of S. 10, the financial guarantee shall meet the requirements of S. 11, and fees shall be those established by the [governing body] as set forth in S. 12.
- (3) PERMIT APPLICATION REVIEW AND APPROVAL. The [administering authority] shall review any permit application that is submitted with a storm water management plan, maintenance agreement, and the required fee. The following approval procedure shall be used:
- (a) Within [number] business days of the receipt of a complete permit application, including all items as required by sub. (2), the [administering authority] shall inform the applicant whether the application, storm water management plan, and maintenance agreement are approved or disapproved based on the requirements of this ordinance.
 - (b) If the storm water permit application, storm water management plan, and maintenance agreement are approved, or if an agreed upon payment of fees in lieu of storm water management practices is made, the [administering authority] shall issue the permit.
 - (c) If the storm water permit application, storm water management plan, or maintenance agreement is disapproved, the [administering authority] shall detail in writing the reasons for disapproval.
 - (d) The [administering authority] may request additional information from the applicant. If additional information is submitted, the [administering authority] shall have [number] business days from the date the additional information is received to inform the applicant that the storm water management plan and maintenance agreement are either approved or disapproved.
 - (e) Failure by the [administering authority] to inform the permit applicant of a decision within [number] business days of a required submittal shall be deemed to mean approval of the submittal and the applicant may proceed as if a permit had been issued.
- (4) PERMIT REQUIREMENTS. All permits issued under this ordinance shall be subject to all of the following conditions, and holders of permits issued under this ordinance shall be deemed to have accepted these conditions. The [administering authority] may suspend or revoke a permit for violation of a permit condition, following written notification of the responsible party. An action by the [administering authority] to suspend or revoke a permit may be appealed in accordance with S. 14.
- (a) Compliance with a permit does not relieve the responsible party of the responsibility to comply with other applicable federal, state, and local laws and regulations.
 - (b) The responsible party shall design and install all structural and non-structural storm water management measures in accordance with the approved storm water management plan and permit.
 - (c) The responsible party shall notify the [administering authority] at least [number] business days before commencing any work in conjunction with the storm water management plan, and within [number] business days upon completion of the storm water management practices. If required as a special condition under sub. (5), the responsible party shall make additional notification according to a schedule set forth by the [administering authority] so that practice installations can be inspected during construction.
 - (d) Practice installations required as part of this ordinance shall be certified "as built" or "record" drawings by a licensed professional engineer. Completed storm water management practices must pass a final inspection by the [administering authority] or its designee to determine if they are in accordance with the approved storm water management plan and ordinance. The [administering authority] or its designee shall notify the responsible party in writing of any changes required in such practices to bring them into compliance with the conditions of a permit.
 - (e) The responsible party shall notify the [administering authority] of any significant modifications it intends to make to an approved storm water management plan. The [administering authority]

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ity] may require that the proposed modifications be submitted to it for approval prior to incorporation into the storm water management plan and execution by the responsible party.

- (f) The responsible party shall maintain all storm water management practices in accordance with the storm water management plan until the practices either become the responsibility of the [governing body], or are transferred to subsequent private owners as specified in the approved maintenance agreement.
 - (g) The responsible party authorizes the [administering authority] to perform any work or operations necessary to bring storm water management measures into conformance with the approved storm water management plan, and consents to a special assessment or charge against the property as authorized under subch. VII of ch. 66, Wis. Stats., or to charging such costs against the financial guarantee posted under S. 11.
 - (h) If so directed by the [administering authority], the responsible party shall repair at the responsible party's own expense all damage to adjoining municipal facilities and drainage ways caused by runoff if such damage is caused by activities that are not in compliance with the approved storm water management plan.
 - (i) The responsible party shall permit property access to the [administering authority] or its designee for the purpose of inspecting the property for compliance with the approved storm water management plan and permit.
 - (j) Where site development or redevelopment involves changes in direction, increases in peak rate and/or total volume of runoff from a site, the [administering authority] may require the responsible party to make appropriate legal arrangements with affected property owners concerning the prevention of endangerment to property or public safety.
 - (k) The responsible party is subject to the enforcement actions and penalties detailed in S. 13, if the responsible party fails to comply with the terms of the permit.
- (5) PERMIT CONDITIONS. Permits issued under this subsection may include conditions established by [administering authority] in addition to the requirements needed to meet the performance standards in S. 07 or a financial guarantee as provided for in S. 11.
- (6) PERMIT DURATION. Permits issued under this section shall be valid from the date of issuance through the date the [administering authority] notifies the responsible party that all storm water management practices have passed the final inspection required under sub. (4) (d).

S. 09 STORM WATER MANAGEMENT PLAN.

- (1) STORM WATER MANAGEMENT PLAN REQUIREMENTS. The storm water management plan required under S. 07 (2) shall contain, at a minimum, all of the following information:
- (a) Name, address, and telephone number for all of the following, or their designees:
 1. Landowner.
 2. Developer.
 3. Project engineer for practice design and certification.
 4. Persons responsible for installation of storm water management practices.
 5. Persons responsible for maintenance of storm water management practices prior to the transfer, if any, of maintenance responsibility to another party.
 - (b) A proper legal description of the property proposed to be developed, referenced to the U.S. Public Land Survey system or to block and lot numbers within a recorded land subdivision plat.
 - (c) Pre-development site conditions, including all of the following:
 1. One or more site maps at a scale of not less than 1 inch equals [number] feet. The site maps shall show all of the following:
 - a. Site location and legal property description.

- a. Predominant soil types and hydrologic soil groups.
 - b. Existing cover type and condition.
 - c. Topographic contours of the site at a scale not to exceed [number] feet.
 - d. Topography and drainage network including enough of the contiguous properties to show runoff patterns onto, through, and from the site.
 - e. Watercourses that may affect or be affected by runoff from the site.
 - f. Flow path and direction for all storm water conveyance sections.
 - g. Watershed boundaries used in hydrology determinations to show compliance with performance standards.
 - h. Lakes, streams, wetlands, channels, ditches, and other watercourses on and immediately adjacent to the site.
 - i. Limits of the 100 year floodplain.
 - j. Location of wells and wellhead protection areas covering the project area and delineated pursuant to s. NR 811.16, Wis. Adm. Code.
2. Hydrology and pollutant loading computations as needed to show compliance with performance standards. All major assumptions used in developing input parameters shall be clearly stated. The geographic areas used in making the calculations shall be clearly cross-referenced to the required maps.
- (d) Post-development site conditions, including all of the following:
1. Explanation of the provisions to preserve and use natural topography and land cover features to minimize changes in peak flow runoff rates and volumes to surface waters and wetlands.
 2. Explanation of any restrictions on storm water management measures in the development area imposed by wellhead protection plans and ordinances.
 3. One or more site maps at a scale of not less than 1 inch equals [number] feet showing all of the following:
 - a. Post-construction pervious areas including vegetative cover type and condition.
 - b. Impervious surfaces including all buildings, structures, and pavement.
 - c. Post-construction topographic contours of the site at a scale not to exceed [number] feet.
 - d. Post-construction drainage network including enough of the contiguous properties to show runoff patterns onto, through, and from the site.
 - e. Locations and dimensions of drainage easements.
 - f. Locations of maintenance easements specified in the maintenance agreement.
 - g. Flow path and direction for all storm water conveyance sections.
 - h. Location and type of all storm water management conveyance and treatment practices, including the on-site and off-site tributary drainage area.

- i. Location and type of conveyance system that will carry runoff from the drainage and treatment practices to the nearest adequate outlet such as a curbed street, storm drain, or natural drainage way.
 - j. Watershed boundaries used in hydrology and pollutant loading calculations and any changes to lakes, streams, wetlands, channels, ditches, and other watercourses on and immediately adjacent to the site.
 - 4. Hydrology and pollutant loading computations as needed to show compliance with performance standards. The computations shall be made for each discharge point in the development, and the geographic areas used in making the calculations shall be clearly cross-referenced to the required maps.
 - 5. Results of investigations of soils and groundwater required for the placement and design of storm water management measures. Detailed drawings including cross-sections and profiles of all permanent storm water conveyance and treatment practices.
 - (e) A description and installation schedule for the storm water management practices needed to meet the performance standards in S. 07.
 - (f) A maintenance plan developed for the life of each storm water management practice including the required maintenance activities and maintenance activity schedule.
 - (g) Cost estimates for the construction, operation, and maintenance of each storm water management practice.
 - (h) Other information requested in writing by the [administering authority] to determine compliance of the proposed storm water management measures with the provisions of this ordinance.
 - (i) All site investigations, plans, designs, computations, and drawings shall be certified by a [licensed professional engineer] to be prepared in accordance with accepted engineering practice and requirements of this ordinance.
- (2) ALTERNATE REQUIREMENTS. The [administering authority] may prescribe alternative submittal requirements for applicants seeking an exemption to on-site storm water management performance standards under S. 07 (5).

S. 10 MAINTENANCE AGREEMENT.

- (1) MAINTENANCE AGREEMENT REQUIRED. The maintenance agreement required under S. 08 (2) for storm water management practices shall be an agreement between the [administering authority] and the responsible party to provide for maintenance of storm water practices beyond the duration period of a permit. The maintenance agreement shall be recorded in the office of the register of deeds for the county where the affected property is located as a property deed restriction so that it is binding upon all subsequent owners of the land served by the storm water management practices.
- (2) AGREEMENT PROVISIONS. The maintenance agreement shall contain the following information and provisions and be consistent with the maintenance plan required by S. 09 (1) (f):
 - (a) Identification of the storm water facilities and designation of the drainage area served by the facilities.
 - (b) A schedule for regular maintenance of each aspect of the storm water management system consistent with the storm water management plan required under S. 08 (2).
 - (c) Identification of the responsible party, organization or city, county, town, or village responsible for long term maintenance of the storm water management practices identified in the storm water management plan required under S. 08 (2).
 - (d) Requirement that the responsible party, organization, or city, county, town, or village shall maintain storm water management practices in accordance with the schedule included in par. (b).

- (e) Authorization for the [administering authority] to access the property to conduct inspections of storm water management practices as necessary to ascertain that the practices are being maintained and operated in accordance with the agreement.
- (f) A requirement on the [administering authority] to maintain public records of the results of the site inspections, to inform the responsible party responsible for maintenance of the inspection results, and to specifically indicate any corrective actions required to bring the storm water management practice into proper working condition.
- (g) Agreement that the party designated under par. (c), as responsible for long term maintenance of the storm water management practices, shall be notified by the [administering authority] of maintenance problems that require correction. The specified corrective actions shall be undertaken within a reasonable time frame as set by the [administering authority].
- (h) Authorization of the [administering authority] to perform the corrected actions identified in the inspection report if the responsible party designated under par. (c) does not make the required corrections in the specified time period. The [administering authority] shall enter the amount due on the tax rolls and collect the money as a special charge against the property pursuant to subch. VII of ch. 66, Wis. Stats.

S. 11 FINANCIAL GUARANTEE.

- (1) ESTABLISHMENT OF THE GUARANTEE. The [administering authority] may require the submittal of a financial guarantee, the form and type of which shall be acceptable to the [administering authority]. The financial guarantee shall be in an amount determined by the [administering authority] to be the estimated cost of construction and the estimated cost of maintenance of the storm water management practices during the period that the designated party in the maintenance agreement has maintenance responsibility. The financial guarantee shall give the [administering authority] the authorization to use the funds to complete the storm water management practices if the responsible party defaults or does not properly implement the approved storm water management plan, upon written notice to the responsible party by the [administering authority] that the requirements of this ordinance have not been met.
- (2) CONDITIONS FOR RELEASE. Conditions for the release of the financial guarantee are all of the following:
 - (a) The [administering authority] shall release the portion of the financial guarantee established under this section, less any costs incurred by the [administering authority] to complete installation of practices, upon submission of "as built plans" or "record" drawings by a licensed professional engineer. The [administering authority] may make provisions for a partial pro-rata release of the financial guarantee based on the completion of various development stages.
 - (b) The [administering authority] shall release the portion of the financial guarantee established under this section to assure maintenance of storm water practices, less any costs incurred by the [administering authority], at such time that the responsibility for practice maintenance is passed on to another entity via an approved maintenance agreement.

S. 12 FEE SCHEDULE.

The fees referred to in other sections of this ordinance shall be established by the [administering authority] and may from time to time be modified by resolution. A schedule of the fees established by the [administering authority] shall be available for review in [location].

S. 13 ENFORCEMENT.

- (1) Any land disturbing construction activity or post-construction runoff initiated after the effective date of this ordinance by any person, firm, association, or corporation subject to the ordinance provisions shall be deemed a violation unless conducted in accordance with the requirements of this ordinance.
- (2) The [administering authority] shall notify the responsible party by certified mail of any non-complying land disturbing construction activity or post-construction runoff. The notice shall describe the nature of the violation, remedial actions needed, a schedule for remedial action, and additional enforcement action that may be taken.
- (3) Upon receipt of written notification from the [administering authority] under sub. (2), the responsible party shall correct work that does not comply with the storm water management plan or other provisions of the per-

mit. The responsible party shall make corrections as necessary to meet the specifications and schedule set forth by the [administering authority] in the notice.

- (4) If the violations to a permit issued pursuant to this ordinance are likely to result in damage to properties, public facilities, or waters of the state, the [administering authority] may enter the land and take emergency actions necessary to prevent such damage. The costs incurred by the [administering authority] plus interest and legal costs shall be billed to the responsible party.
- (5) The [administering authority] is authorized to post a stop work order on all land disturbing construction activity that is in violation of this ordinance, or to request the [municipal attorney, corporation counsel] to obtain a cease and desist order in any court with jurisdiction.
- (6) The [administering authority] may revoke a permit issued under this ordinance for non-compliance with ordinance provisions.
- (7) Any permit revocation, stop work order, or cease and desist order shall remain in effect unless retracted by the [administering authority] or by a court with jurisdiction.
- (8) The [administering authority] is authorized to refer any violation of this ordinance, or a stop work order or cease and desist order issued pursuant to this ordinance, to the [municipal attorney, corporation counsel] for the commencement of further legal proceedings in any court with jurisdiction.
- (9) Any person, firm, association, or corporation who does not comply with the provisions of this ordinance shall be subject to a forfeiture of not less than [number] dollars or more than [number] dollars per offense, together with the costs of prosecution. Each day that the violation exists shall constitute a separate offense.
- (10) Compliance with the provisions of this ordinance may also be enforced by injunction in any court with jurisdiction. It shall not be necessary to prosecute for forfeiture or a cease and desist order before resorting to injunctive proceedings.

Note to Users: *Injunctive orders are authorized pursuant to s. 59.69 (11), 61.35, or 62.23 (8), Wis. Stats., for counties, villages, towns with village powers, and cities respectively.*

- (11) When the [administering authority] determines that the holder of a permit issued pursuant to this ordinance has failed to follow practices set forth in the storm water management plan, or has failed to comply with schedules set forth in said storm water management plan, the [administering authority] or a party designated by the [administering authority] may enter upon the land and perform the work or other operations necessary to bring the condition of said lands into conformance with requirements of the approved storm water management plan. The [administering authority] shall keep a detailed accounting of the costs and expenses of performing this work. These costs and expenses shall be deducted from any financial security posted pursuant to S. 11 of this ordinance. When such a security has not been established, or when such a security is insufficient to cover these costs, the costs and expenses shall be entered on the tax roll as a special charge against the property and collected with any other taxes levied thereon for the year in which the work is completed.

S. 14 APPEALS.

- (1) BOARD OF [APPEALS or ADJUSTMENT]. The board of [appeals or adjustments], created pursuant to section [number] of the [name of municipality] ordinances pursuant to s. [59.694, 60.65, 61.354 (4) (b), or 62.23 (7) (e)], Wis. Stats., shall hear and decide appeals when it is alleged that there is error in any order, decision or determination made by the [administering authority] in administering this ordinance. The board shall also use the rules, procedures, duties, and powers authorized by statute in hearing and deciding appeals. Upon appeal, the board may authorize variances from the provisions of this ordinance that are not contrary to the public interest, and when owing to special conditions a literal enforcement of the ordinance will result in unnecessary hardship.
- (2) WHO MAY APPEAL. Appeals to the board of [appeals or adjustments] may be taken by any aggrieved person or by an officer, department, board, or bureau of the [name of municipality] affected by any decision of the [administering authority].

S. 15 SEVERABILITY.

If any section, clause, provision or portion of this ordinance is judged unconstitutional or invalid by a court of competent jurisdiction, the remainder of the ordinance shall remain in force and not be affected by such judgment.

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S. 16 EFFECTIVE DATE.

This ordinance shall be in force and effect from and after its adoption and publication. The above and foregoing ordinance was duly adopted by the [governing body] of the [name of municipality] on the [number] day of [month], [year].

Approved: _____

Attested: _____

Published on [day, month, year].